

Data Exchange Standard – Date, Time and Date and Time

Office of the Corporate Chief Information Officer, Strategy and Governance Branch

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Standard Statement

Data exchange standards are required to ensure the clarity and the accuracy of data exchanged between Government of Alberta (GoA) applications.

When dates are represented by numbers they can be interpreted in different ways, which can result in inaccurate dates in your data store.

The standard below outlines the Government of Alberta (GoA) data standard for:

- Date
- Time
- Date and Time

This standard defines the required components of date and time information and applies to the exchange of the date and time information between GoA Applications. It is also a recommendation for the storage and display of date and time information.

Authority

Internal use only.

Scope

This standard applies to all Ministries within the GoA.

Standard Specification

This date, time, and date and time data standard aligns with the “Date and time format - ISO 8601” standard and follows the Data Exchange Standard – Character Set (UTF-8).

ISO 8601 describes an internationally accepted way to represent dates and times using numbers. BCE (Before the Common Era) is not included in this standard.

The following sections illustrate the recommended formatting for:

- Date
- Time
- Date and Time

Date			
Description	A date at which an event occurs.		
Format	YYYY-MM-DD		
	YYYY	N4	The year in which the event occurs.

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			Four digit number from 0000 to 9999, representing a Gregorian calendar year.
	MM	N2	The month in which the event occurs. Two digit number from 01 to 12, representing a Gregorian calendar month. Leading zeros are required.
	DD	N2	The day in which the event occurs. Two digit number from 01 to 31, representing a Gregorian calendar day. Leading zeros are required.

Time			
Description	The time at which an event occurs.		
Format	hh:mm:ssZhh:mm		
	hh	N2	The hour in which the event occurs. Two digit number from 00 to 23, where leading zeros are required.
	mm	N2	The minute in which the event occurs. Two digit number from 00 to 59, where leading zeros are required.
	ss	N2	The second in which the event occurs. Two digit number from 00 to 59, where leading zeros are required.
	Z	C1	The time zone indicator where a plus (+) or minus (-) indicates whether the time is ahead of the Coordinated Universal Time (UTC)
	hh	N2	The time offset in hours. Two digit number from 00 to 23, where leading zeros are required.
	mm	N2	The time offset in minutes. Two digit number from 00 to 59, where leading zeros are required.

Date and Time			
Description	The actual date and time an event occurs.		
Format	YYYY-MM-DD hh:mm:ssZhh:mm		
	YYYY	N4	The year in which the event occurs. Four digit number from 0000 to 9999, representing a Gregorian calendar year.
	MM	N2	The month in which the event occurs. Two digit number from 01 to 12, representing a Gregorian calendar month. Leading zeros are required.
	DD	N2	The day in which the event occurs. Two digit number from 01 to 31, representing a Gregorian calendar day. Leading zeros are required.
	hh	N2	The hour in which the event occurs. Two digit number from 00 to 23, where leading zeros are required.
	mm	N2	The minute in which the event occurs. Two digit number from 00 to 59, where leading zeros are required.
	ss	N2	The second in which the event occurs. Two digit number from 00 to 59, where leading zeros are required.
	Z	C1	The time zone indicator where a plus (+) or minus (-) indicates

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			whether the time is ahead of the Coordinated Universal Time (UTC)
	hh	N2	The time zone offset in hours. Two digit number from 00 to 23, where leading zeros are required.
	mm	N2	The time zone offset in minutes. Two digit number from 00 to 59, where leading zeros are required.

References and Supporting Resources

- Date and time format - ISO 8601
<http://www.iso.org/iso/home/standards/iso8601.htm>
- Data Exchange Standard – Character Set (UTF-8)
<https://imtpolicy.sp.alberta.ca/standards/Pages/Data-Exchange-Standard-Character-Set.aspx>

Appendix A

Types of Standards	Description
Technical Standard	These are detailed, unique standards that have developed in response to government IMT policies. Technical standards are intended to be replicable, transferable, and adaptable across ministries and other government agencies. Examples of these could include address data standards or specifications for a single identifier for transacting with government electronically.
Product Standard	An IMT product or specific technology oriented standard that facilitates the task of planning for enhancements and acquisitions within the government's broad information systems environment. As a definitive list of the numerous technologies either employed or under evaluation by Workplace Technology Services, product standards are critical in establishing conformity, interoperability and interchange-ability. Examples of these could include a government-wide standard for document, record management and database, and the list of core products for government workstations.
Process Standard	An established, mandatory business practice that supports IMT projects and existing systems to improve the outcome, diminish risks, and increase reliability. Examples could include business continuity planning processes, threat risk assessment processes, etc.
Reference Standard	An IMT industry standard (either a national or international formal or de facto standard) that has been adopted for use by the Province of Alberta. A Reference Standard may be adopted either as stand-alone or as a precursor to a customized standard or policy document. Examples could include the 1024 bit RSA standard for public key encryption.